

What is claimed is:

1 1. A method of providing a breathing gas comprising the
2 steps of:

3 sensing a carbon-dioxide level associated with a
4 patient breathing interface;

5 determining if the level of carbon-dioxide is
6 increasing or decreasing;

7 if the level is decreasing, determining if the level
8 of carbon-dioxide has crossed a threshold parameter;

9 if the carbon-dioxide level has crossed the threshold
10 parameter, increasing the breathing gas pressure provided
11 to the patient breathing interface;

12 decreasing the breathing gas pressure provided to the
13 patient breathing interface after a predetermined period of
14 time; and

15 the increasing and decreasing of breathing gas
16 pressure maintaining a positive pressure sufficient to
17 sustain open the airway of a patient wearing the breathing
18 interface.

1 2. The method of claim 1 wherein the step of sensing a
2 carbon-dioxide level associated with a patient breathing
3 interface comprises sensing the carbon-dioxide level using
4 infrared light.

1 3. The method of claim 1 wherein the step of sensing a
2 carbon-dioxide level associated with a patient breathing
3 interface comprises emitting infrared light within the
4 patient breathing interface.

1 4. The method of claim 3 wherein the step of sensing a
2 carbon-dioxide level associated with a patient breathing
3 interface comprises detecting infrared light within the
4 patient breathing interface.

1 5. The method of claim 3 wherein the step of emitting
2 comprising emitting infrared light into a fiber optic cable
3 connected to the patient breathing interface.

1 6. The method of claim 4 wherein the step of detecting
2 infrared light comprising sensing the infrared light in a
3 fiber optic cable coupled to the patient breathing
4 interface.

1 7. The method of claim 1 wherein the step of sensing a
2 carbon-dioxide level associated with a patient breathing
3 interface comprises sensing the carbon-dioxide level vented
4 from the patient breathing interface.

1 8. The method of claim 1 further comprising the step of
2 initiating a monostable timer if the carbon-dioxide level
3 has crossed the threshold parameter.

1 9. The method of claim 8 wherein the step of decreasing
2 the breathing gas pressure provided to the patient
3 breathing interface after a predetermined period of time
4 comprises decreasing the breathing gas pressure upon
5 expiration of the monostable timer.

1 10. A method of providing a breathing gas to a patient
2 comprising the steps of:

3 sensing a carbon-dioxide level associated with a
4 patient breathing interface;
5 determining if the sensed level of carbon-dioxide is
6 increasing or decreasing;
7 if the sensed carbon-dioxide level is increasing,
8 determining if the sensed carbon-dioxide level has crossed
9 a first threshold parameter;
10 if the sensed carbon-dioxide level has crossed the
11 first threshold parameter, decreasing the breathing gas
12 pressure provided to the patient breathing interface;
13 if the sensed carbon-dioxide level is decreasing,
14 determining if the sensed carbon-dioxide level has crossed
15 a second threshold parameter;
16 if the sensed carbon-dioxide level has crossed the
17 second threshold parameter, increasing the breathing gas
18 pressure provided to the patient breathing interface; and
19 the increasing and decreasing of breathing gas
20 pressure maintaining a positive pressure sufficient to
21 sustain open the airway of a patient wearing the breathing
22 interface.

1 11. The method of claim 10 wherein the step of sensing a
2 carbon-dioxide level associated with a patient breathing
3 interface comprises sensing the carbon-dioxide level using
4 infrared light.

1 12. The method of claim 10 wherein the step of sensing a
2 carbon-dioxide level associated with a patient breathing
3 interface comprises emitting infrared light within the
4 patient breathing interface.

1 13. The method of claim 12 wherein the step of sensing a
2 carbon-dioxide level associated with a patient breathing
3 interface comprises detecting infrared light within the
4 patient breathing interface.

1 14. The method of claim 12 wherein the step of emitting
2 comprising emitting infrared light into a fiber optic cable
3 coupled to the patient breathing interface.

1 15. The method of claim 14 wherein the step of detecting
2 infrared light comprising sensing the infrared light in a
3 fiber optic cable coupled to the patient breathing
4 interface.

1 16. The method of claim 10 wherein the step of sensing a
2 carbon-dioxide level associated with a patient breathing
3 interface comprises sensing the carbon-dioxide level vented
4 from the patient breathing interface.

1 17. A method of providing a breathing gas to a patient
2 comprising the steps of:
3 sensing a carbon-dioxide level associated with a
4 patient breathing interface;
5 determining if the sensed level of carbon-dioxide is
6 increasing or decreasing;
7 if the sensed level of carbon-dioxide is decreasing,
8 determining whether the sensed level of carbon-dioxide at
9 or below a threshold level;
10 if the sensed level of carbon-dioxide is at or below
11 the threshold level, increasing the pressure of the
12 breathing gas for a fixed period of time;

13 decreasing the pressure of the breathing gas upon
14 expiration of the fixed period of time;

15 the increasing and decreasing of the pressure of the
16 breathing gas maintaining a positive pressure sufficient to
17 sustain open the airway of the patient.

1 18. The method of claim 17 wherein the step of increasing
2 the pressure of the breathing gas for a fixed period of
3 time comprises initiating a monostable timer.

1 19. The method of claim 17 wherein the step of sensing a
2 carbon-dioxide level associated with a patient breathing
3 interface comprises the step of sensing a carbon-dioxide
4 level with infrared light.

1 20. The method of claim 19 wherein the step of sensing a
2 carbon-dioxide level with infrared light comprises the step
3 of sensing a carbon-dioxide level vented from the patient
4 breathing interface.

1 21. A method of administering a CPAP therapy comprising
2 the steps of:

3 monitoring the level of carbon-dioxide vented from a
4 patient breathing interface;

5 if the level of carbon-dioxide vented is decreasing,
6 determining of the level of carbon-dioxide is at or below a
7 threshold value;

8 if the level of carbon-dioxide vented is at or below
9 the threshold value, providing a first positive airway
10 pressure to the patient breathing interface for a fixed
11 period of time; and

12 upon the expiration of the fixed period of time
13 providing a second positive airway pressure to the patient
14 breathing interface.

1 22. A system for administering a breathing gas to a
2 patient breathing interface comprising:

3 (a) a blower for providing positive pressure
4 breathing gas;

5 (b) a controller in circuit communication with the
6 blower;

7 (c) an infrared light emitter and detector in circuit
8 communication with the controller for detecting the level
9 of carbon-dioxide associated with the patient breathing
10 interface; and

11 (d) logic for increasing and decreasing the level of
12 the positive pressure breathing gas based on the level of
13 carbon-dioxide detected to maintain open the airway of a
14 patient.

1 23. The system of claim 22 wherein the logic for
2 increasing and decreasing the level of the positive
3 pressure breathing gas based on the level of carbon-dioxide
4 associated with the patient breathing interface comprises
5 logic for comparing the level of carbon-dioxide associated
6 with the patient breathing interface to a threshold
7 parameter.

1 24. The system of claim 22 further comprising a monostable
2 timer having a variable off time period and predetermined
3 on time period.

1 25. The system of claim 22 further comprising a optical
2 fibers coupled to the infrared emitter and detector.

1 26. The system of claim 22 wherein the infrared emitter
2 and detector are located within a housing accommodating the
3 controller.

1 27. The system of claim 22 wherein the infrared emitter
2 and detector are located within the patent breathing
3 interface.

1 28. The system of claim 22 wherein the infrared emitter
2 and detector are located proximate to a vent of the patient
3 breathing interface.